

Appendix B

Air Quality Calculations

Beach Edinger Net Criteria Pollutant Emissions

<u>Operational</u>	<u>Development Trend</u>	<u>Emission Type</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	
Residential	Increase	Natural Gas	4.95	64.12	27.85	0	0.12	0.12	
		Landscape	0.25	0.04	3.09	0	0.01	0.01	
		Consumer Products	328.32	0	0	0	0	0	
		Architectural Coatings	12.12	0	0	0	0	0	
		Mobile	151.12	138.49	1578.42	4.75	770.63	149.53	
		Subtotal	496.76	202.65	1609.36	4.75	770.76	149.66	
Commercial/Office	Decrease	Natural Gas	0.25	3.49	2.93	0	0.01	0.01	
		Landscape	0.25	0.04	3.09	0	0.01	0.01	
		Consumer Products	0	0	0	0	0	0	
		Architectural Coatings	2.59	0	0	0	0	0	
		Mobile	50.82	54.38	596.82	1.84	301.54	58.41	
		Subtotal	53.91	57.91	602.84	1.84	301.56	58.43	
		<u>Total Net Emissions</u>		442.85	144.74	1006.52	2.91	469.2	91.23
		<u>Net Natural Gas</u>		4.7	60.63	24.92	0	0.11	0.11
		<u>Net Landscape</u>		0	0	0	0	0	0
		<u>Net Consumer Products</u>		328.32	0	0	0	0	0
		<u>Net Architectural Coatings</u>		9.53	0	0	0	0	0
		<u>Net Mobile</u>		100.3	84.11	981.6	2.91	469.09	91.12

Note: All emissions are derived from the URBEMIS runs performed for the project

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\0407 Beach-Edinger Corridor Study Program EIR\Air Data\Beach-Edinger - Area-Operational Res.urb924

Project Name: Beach-Edinger - Operational

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	345.64	64.16	30.94	0.00	0.13	0.13	81,752.05

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	151.12	138.49	1,578.42	4.75	770.63	149.53	468,052.42

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	496.76	202.65	1,609.36	4.75	770.76	149.66	549,804.47

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	4.95	64.12	27.85	0.00	0.12	0.12	81,746.43
Hearth - No Summer Emissions							
Landscape	0.25	0.04	3.09	0.00	0.01	0.01	5.62
Consumer Products	328.32						
Architectural Coatings	12.12						
TOTALS (lbs/day, unmitigated)	345.64	64.16	30.94	0.00	0.13	0.13	81,752.05

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Apartments low rise	145.19	132.74	1,515.71	4.56	738.80	143.37	448,875.74
Other	5.93	5.75	62.71	0.19	31.83	6.16	19,176.68
TOTALS (lbs/day, unmitigated)	151.12	138.49	1,578.42	4.75	770.63	149.53	468,052.42

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Apartments low rise	400.00	6.62	dwelling units	6,400.00	42,368.00	428,035.42
Other		10.00	1000 sq ft	205.60	2,056.00	18,448.49
					44,424.00	446,483.91

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	49.4	0.0	100.0	0.0
Light Truck < 3750 lbs	7.3	0.0	100.0	0.0
Light Truck 3751-5750 lbs	23.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.7	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Other				2.0	1.0	97.0

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\0407 Beach-Edinger Corridor Study Program EIR\Air Data\Beach-Edinger - Area-Operational C-O
emis cred.urb924

Project Name: Beach-Edinger - Operational Trip Credit

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	3.09	3.53	6.02	0.00	0.02	0.02	4,190.42

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	50.82	54.38	596.82	1.84	301.54	58.41	181,871.24

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	53.91	57.91	602.84	1.84	301.56	58.43	186,061.66

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.25	3.49	2.93	0.00	0.01	0.01	4,184.80
Hearth - No Summer Emissions							
Landscape	0.25	0.04	3.09	0.00	0.01	0.01	5.62
Consumer Products	0.00						
Architectural Coatings	2.59						
TOTALS (lbs/day, unmitigated)	3.09	3.53	6.02	0.00	0.02	0.02	4,190.42

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Strip mall	40.83	44.44	484.52	1.50	245.91	47.62	148,176.24
Office park	9.99	9.94	112.30	0.34	55.63	10.79	33,695.00
TOTALS (lbs/day, unmitigated)	50.82	54.38	596.82	1.84	301.54	58.41	181,871.24

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		89.25	1000 sq ft	178.00	15,886.50	142,549.56
Office park		11.42	1000 sq ft	265.00	3,026.30	32,236.15
					18,912.80	174,785.71

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	49.4	0.0	100.0	0.0
Light Truck < 3750 lbs	7.3	0.0	100.0	0.0
Light Truck 3751-5750 lbs	23.9	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.4	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.8	0.0	83.3	16.7
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.7	33.3	66.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.1	0.0	90.9	9.1

	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
Office park				48.0	24.0	28.0

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

Intersection: Goldenwest St and Bolsa Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Goldenwest St	At Grade	35	35
East-West Roadway:	Bolsa Ave	At Grade	35	35

A.M. Peak Hour Traffic Volumes

N	100	1,470	160	E
W	<	v	>	
140 ^				280
590 >				1,060
120 v				280
S	<	1,120	>	180

P.M. Peak Hour Traffic Volumes

N	110	1,350	140	E
W	<	v	>	
340 ^				310
1,190 >				650
340 v				560
S	<	1,430	>	250

Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,270	N-S Road:	4,150
E-W Road:	2,550	E-W Road:	3,100

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations Edge	25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,270	3.23	1.00	0.64	0.52	0.37
East-West Road	2.8	2.3	2.0	1.7	2,550	3.23	0.23	0.19	0.16	0.14
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,150	3.23	1.27	0.82	0.66	0.47
East-West Road	2.8	2.3	2.0	1.7	3,100	3.23	0.28	0.23	0.20	0.17

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.2	6.6	4.2
25 Feet from Roadway Edge	5.8	6.0	3.8
50 Feet from Roadway Edge	5.7	5.9	3.7

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

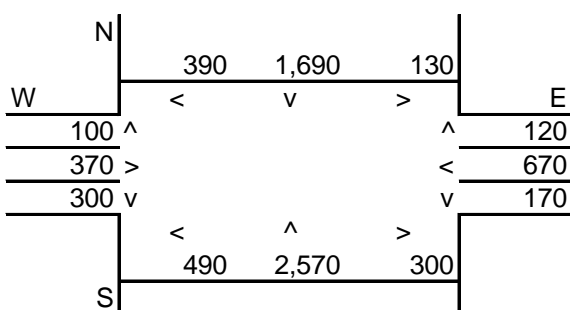
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

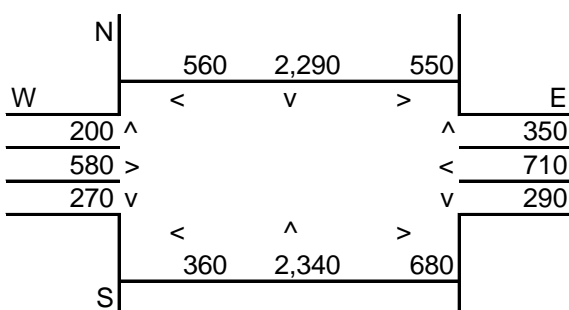
Intersection: Beach Blvd and Edinger Ave
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed	
				A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35	35
East-West Roadway:	Edinger Ave	At Grade	8	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,520	N-S Road:	6,290
E-W Road:	2,320	E-W Road:	3,160

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
Roadway	Reference CO Concentrations				Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,520	3.23	1.52	1.02	0.82	0.61
East-West Road	2.6	2.2	1.9	1.6	2,320	3.23	0.19	0.16	0.14	0.12
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,290	3.23	1.73	1.16	0.94	0.69
East-West Road	2.6	2.2	1.9	1.6	3,160	3.23	0.27	0.22	0.19	0.16

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$
$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	6.7	7.0	4.5
25 Feet from Roadway Edge	6.2	6.4	4.1
50 Feet from Roadway Edge	6.0	6.1	3.9

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

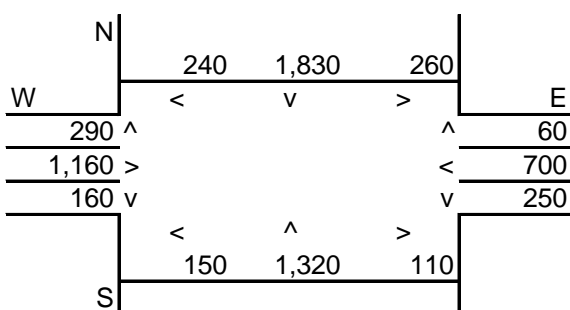
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

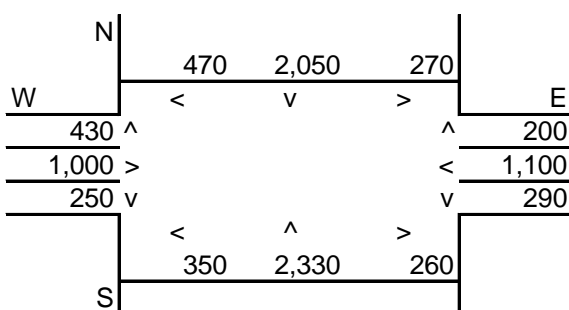
Intersection: Beach Blvd and Warner Ave
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed	
				A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35	35
East-West Roadway:	Warner Ave	At Grade	6	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	4,000	N-S Road:	5,750
E-W Road:	2,700	E-W Road:	3,600

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
Roadway	Reference CO Edge	Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,000	3.23	1.10	0.74	0.59	0.44
East-West Road	2.8	2.3	2.0	1.7	2,700	3.23	0.24	0.20	0.17	0.15
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,750	3.23	1.58	1.06	0.85	0.63
East-West Road	2.8	2.3	2.0	1.7	3,600	3.23	0.33	0.27	0.23	0.20

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$
$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	6.3	6.9	4.4
25 Feet from Roadway Edge	5.9	6.3	4.0
50 Feet from Roadway Edge	5.8	6.1	3.9

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

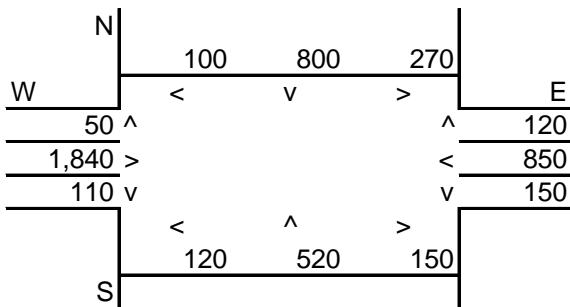
Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

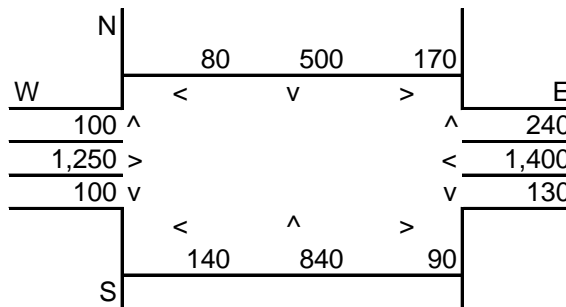
Intersection: Newland St and Warner Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Newland St	At Grade	4	35
East-West Roadway:	Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,860
E-W Road: 3,380

N-S Road: 1,930
E-W Road: 3,280

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,860	3.23	0.20	0.16	0.13	0.10
East-West Road	9.5	6.1	4.9	3.5	3,380	3.23	1.04	0.67	0.54	0.38
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,930	3.23	0.21	0.16	0.14	0.11
East-West Road	9.5	6.1	4.9	3.5	3,280	3.23	1.01	0.65	0.52	0.37

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.2	6.2	4.0
25 Feet from Roadway Edge	5.8	5.8	3.7
50 Feet from Roadway Edge	5.7	5.7	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

Intersection: Beach Blvd and Slater
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	210	1,930	200	E
W	<	v	>	
160	^		^	100
780	>		<	440
180	v		v	100
	<	^	>	
	170	1,450	50	
S				

P.M. Peak Hour Traffic Volumes

N	170	1,860	170	E
W	<	v	>	
210	^		^	170
630	>		<	610
190	v		v	100
	<	^	>	
	210	2,060	100	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,050
E-W Road: 1,940

N-S Road: 4,640
E-W Road: 2,020

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,050	3.23	1.11	0.75	0.60	0.45
East-West Road	3.3	2.6	2.2	1.7	1,940	3.23	0.21	0.16	0.14	0.11
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,640	3.23	1.27	0.85	0.69	0.51
East-West Road	3.3	2.6	2.2	1.7	2,020	3.23	0.22	0.17	0.14	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.3	6.5	4.1
25 Feet from Roadway Edge	5.9	6.0	3.8
50 Feet from Roadway Edge	5.7	5.8	3.7

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

Intersection: Beach Blvd and Talbert
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Talbert Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	160	1,750	290	E
W	<	v	>	
60 ^				150
400 >				410
170 v				200
	<	^	>	
	170	1,470	180	
S				

P.M. Peak Hour Traffic Volumes

N	100	2,110	310	E
W	<	v	>	
170 ^				260
540 >				520
120 v				350
	<	^	>	
	200	2,100	280	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,940	N-S Road:	5,160
E-W Road:	1,630	E-W Road:	2,260

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations Edge	25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	3,940	3.23	1.08	0.73	0.59	0.43
East-West Road	2.8	2.3	2.0	1.7	1,630	3.23	0.15	0.12	0.11	0.09
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,160	3.23	1.42	0.95	0.77	0.57
East-West Road	2.8	2.3	2.0	1.7	2,260	3.23	0.20	0.17	0.15	0.12

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.2	6.6	4.2
25 Feet from Roadway Edge	5.8	6.1	3.9
50 Feet from Roadway Edge	5.7	5.9	3.7

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

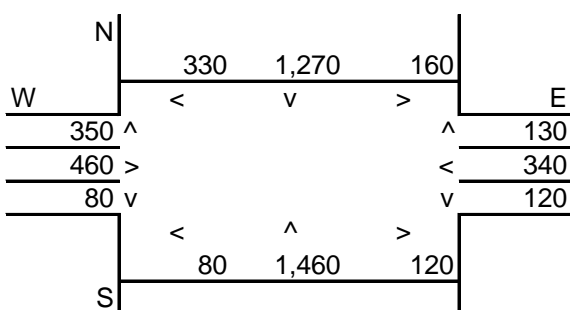
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

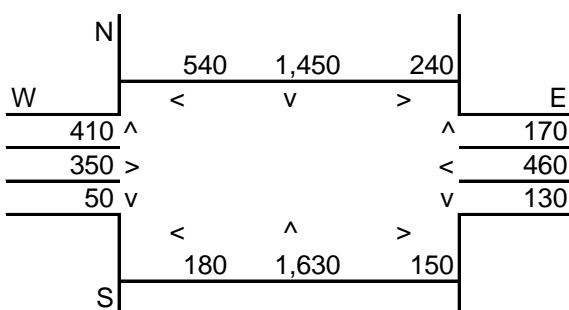
Intersection: Beach Blvd and Ellis Ave
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed	
				A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35	35
East-West Roadway:	Ellis Ave	At Grade	4	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	3,700	N-S Road:	4,440
E-W Road:	1,640	E-W Road:	1,990

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations				Traffic	Emission				
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	3,700	3.23	1.02	0.68	0.55	0.41
East-West Road	3.3	2.6	2.2	1.7	1,640	3.23	0.17	0.14	0.12	0.09
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,440	3.23	1.22	0.82	0.66	0.49
East-West Road	3.3	2.6	2.2	1.7	1,990	3.23	0.21	0.17	0.14	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$
$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	6.2	6.4	4.1
25 Feet from Roadway Edge	5.8	6.0	3.8
50 Feet from Roadway Edge	5.7	5.8	3.7

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

Intersection: Beach Blvd and Garfield Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	6	35
East-West Roadway:	Garfield Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	80	1,200	150	E
W	<	v	>	
170	^		^	110
520	>		<	280
160	v		v	140
S	<	140	1,250	>
				80

P.M. Peak Hour Traffic Volumes

N	170	1,580	220	E
W	<	v	>	
200	^		^	160
500	>		<	500
140	v		v	170
S	<	260	1,680	>
				120

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,970
E-W Road: 1,350

N-S Road: 4,010
E-W Road: 1,770

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,970	3.23	0.91	0.59	0.47	0.34
East-West Road	3.3	2.6	2.2	1.7	1,350	3.23	0.14	0.11	0.10	0.07
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,010	3.23	1.23	0.79	0.64	0.45
East-West Road	3.3	2.6	2.2	1.7	1,770	3.23	0.19	0.15	0.13	0.10

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.1	6.4	4.1
25 Feet from Roadway Edge	5.7	5.9	3.8
50 Feet from Roadway Edge	5.6	5.8	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

Intersection: Beach Blvd and Yorktown Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	6	35
East-West Roadway:	Yorktown Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	100	1,140	100	E
W	<	v	>	
160	^		^	120
420	>		<	420
220	v		v	120
S	<	110	>	100
	^	1,140	^	

P.M. Peak Hour Traffic Volumes

N	160	1,380	190	E
W	<	v	>	
190	^		^	140
460	>		<	340
90	v		v	140
S	<	240	>	200
	^	1,760	^	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,830
E-W Road: 1,430

N-S Road: 3,820
E-W Road: 1,480

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,830	3.23	0.87	0.56	0.45	0.32
East-West Road	3.3	2.6	2.2	1.7	1,430	3.23	0.15	0.12	0.10	0.08
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,820	3.23	1.17	0.75	0.60	0.43
East-West Road	3.3	2.6	2.2	1.7	1,480	3.23	0.16	0.12	0.11	0.08

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.3	4.0
25 Feet from Roadway Edge	5.7	5.9	3.7
50 Feet from Roadway Edge	5.5	5.7	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

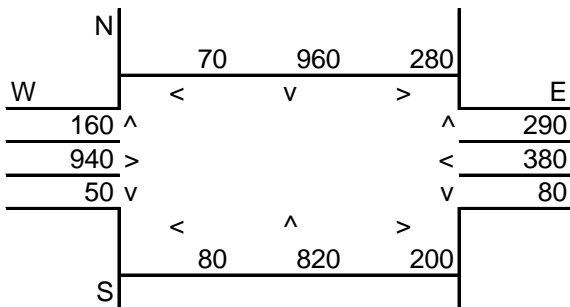
Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

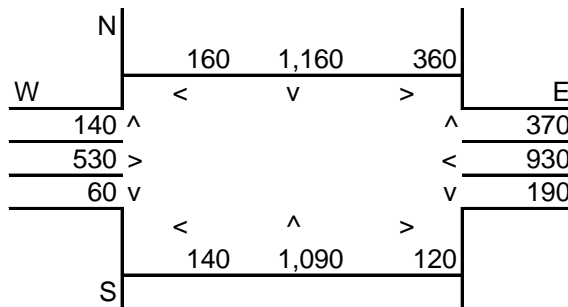
Intersection: Beach Blvd and Adams Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	6	35
East-West Roadway:	Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,580
E-W Road: 2,170

N-S Road: 3,280
E-W Road: 2,500

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,580	3.23	0.79	0.51	0.41	0.29
East-West Road	2.8	2.3	2.0	1.7	2,170	3.23	0.20	0.16	0.14	0.12
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,280	3.23	1.01	0.65	0.52	0.37
East-West Road	2.8	2.3	2.0	1.7	2,500	3.23	0.23	0.19	0.16	0.14

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.2	4.0
25 Feet from Roadway Edge	5.7	5.8	3.7
50 Feet from Roadway Edge	5.5	5.7	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

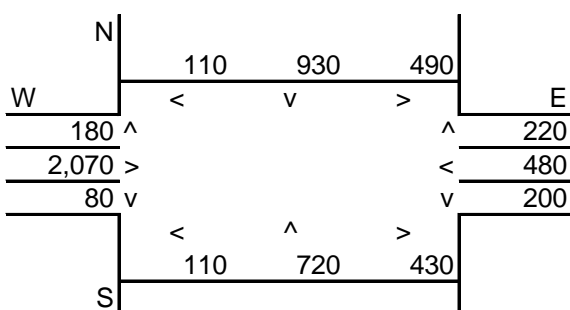
Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2008

Roadway Data

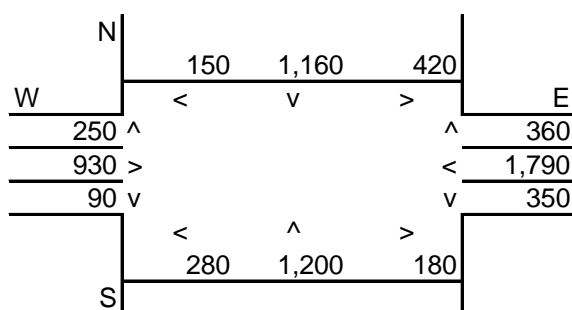
Intersection: Brookhurst St and Adams Ave
Analysis Condition: Existing

		Roadway Type	No. of Lanes	Average Speed	
				A.M.	P.M.
North-South Roadway:	Brookhurst St	At Grade	6	35	35
East-West Roadway:	Adams Ave	At Grade	6	35	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,650	N-S Road:	3,540
E-W Road:	3,890	E-W Road:	4,030

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
Roadway	Reference CO Edge	Concentrations 25 Feet	50 Feet	100 Feet	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,650	3.23	0.24	0.20	0.17	0.15
East-West Road	9.5	6.1	4.9	3.5	3,890	3.23	1.19	0.77	0.62	0.44
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	3,540	3.23	0.32	0.26	0.23	0.19
East-West Road	9.5	6.1	4.9	3.5	4,030	3.23	1.24	0.79	0.64	0.46

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$
$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	6.4	6.6	4.2
25 Feet from Roadway Edge	6.0	6.1	3.8
50 Feet from Roadway Edge	5.8	5.9	3.7

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

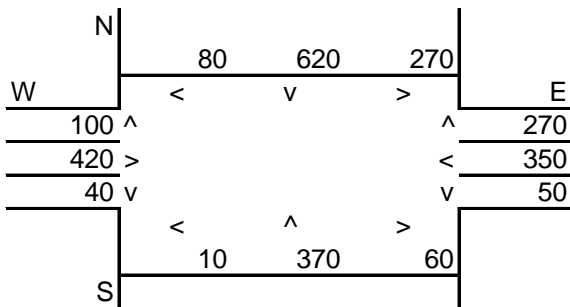
Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

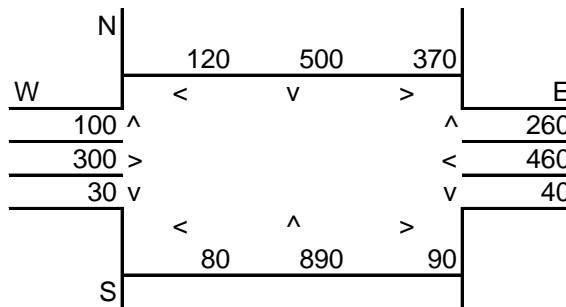
Intersection: Beach Blvd and Atlanta Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	6	35
East-West Roadway:	Atlanta Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	1,710	N-S Road:	2,240
E-W Road:	1,420	E-W Road:	1,520

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	1,710	3.23	0.53	0.34	0.27	0.19
East-West Road	3.3	2.6	2.2	1.7	1,420	3.23	0.15	0.12	0.10	0.08
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,240	3.23	0.69	0.44	0.35	0.25
East-West Road	3.3	2.6	2.2	1.7	1,520	3.23	0.16	0.13	0.11	0.08

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.8	3.7
25 Feet from Roadway Edge	5.5	5.6	3.5
50 Feet from Roadway Edge	5.4	5.5	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

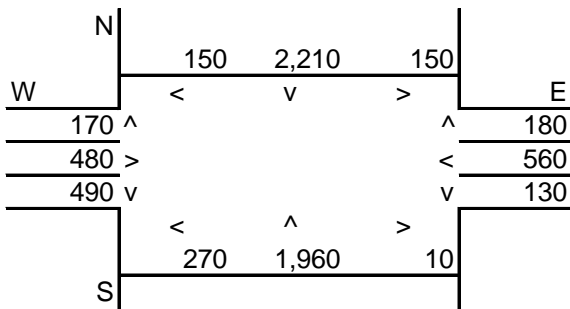
Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

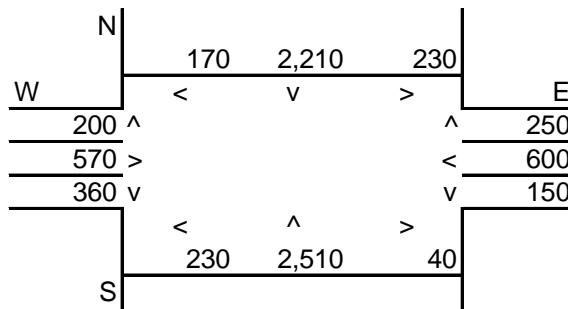
Intersection: Beach Blvd and Bolsa Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Bolsa Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	5,070	N-S Road:	5,570
E-W Road:	2,120	E-W Road:	2,130

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,070	3.23	1.39	0.93	0.75	0.56
East-West Road	3.3	2.6	2.2	1.7	2,120	3.23	0.23	0.18	0.15	0.12
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,570	3.23	1.53	1.03	0.83	0.61
East-West Road	3.3	2.6	2.2	1.7	2,130	3.23	0.23	0.18	0.15	0.12

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.6	6.8	4.3
25 Feet from Roadway Edge	6.1	6.2	3.9
50 Feet from Roadway Edge	5.9	6.0	3.8

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2008

Roadway Data

Intersection: Beach Blvd and McFadden Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	McFadden Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	270	2,360	200	E
W	<	v	>	
270	^		^	170
370	>		<	520
130	v		v	350
	<	^	>	
	190	1,910	120	
S				

P.M. Peak Hour Traffic Volumes

N	240	2,090	240	E
W	<	v	>	
360	^		^	180
460	>		<	490
140	v		v	390
	<	^	>	
	270	2,330	270	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 5,180
E-W Road: 1,750

N-S Road: 5,490
E-W Road: 2,030

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,180	3.23	1.42	0.95	0.77	0.57
East-West Road	3.3	2.6	2.2	1.7	1,750	3.23	0.19	0.15	0.12	0.10
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,490	3.23	1.51	1.01	0.82	0.60
East-West Road	3.3	2.6	2.2	1.7	2,030	3.23	0.22	0.17	0.14	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.6	6.7	4.3
25 Feet from Roadway Edge	6.1	6.2	3.9
50 Feet from Roadway Edge	5.9	6.0	3.8

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Goldenwest St and Bolsa Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Goldenwest St	At Grade	6	35
East-West Roadway:	Bolsa Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	107	1,442	281	E
W	<	v	>	
190 ^				425
640 >				1,210
123 v				351
	<	^	>	
S	152	1,304	252	

P.M. Peak Hour Traffic Volumes

N	115	1,450	238	E
W	<	v	>	
368 ^				675
1,460 >				764
365 v				406
	<	^	>	
S	214	1,480	256	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,749
E-W Road: 3,159

N-S Road: 4,326
E-W Road: 3,799

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,749	1.94	0.69	0.44	0.36	0.25
East-West Road	2.8	2.3	2.0	1.7	3,159	1.94	0.17	0.14	0.12	0.10
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,326	1.94	0.80	0.51	0.41	0.29
East-West Road	2.8	2.3	2.0	1.7	3,799	1.94	0.21	0.17	0.15	0.13

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.9	6.0	3.8
25 Feet from Roadway Edge	5.6	5.7	3.6
50 Feet from Roadway Edge	5.5	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: I-405 SB Ramps and Center Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	I-405 SB Ramps	At Grade	4	35
East-West Roadway:	Center Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	170	0	792	E
W	<	v	>	
118 ^				411
209 >				274
0 v				0
	<	^	>	
	0	0	0	
S				

P.M. Peak Hour Traffic Volumes

N	250	0	982	E
W	<	v	>	
391 ^				658
222 >				357
0 v				0
	<	^	>	
	0	0	0	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,491
E-W Road: 1,686

N-S Road: 2,281
E-W Road: 2,219

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,491	1.94	0.10	0.08	0.06	0.05
East-West Road	11.9	7.0	5.4	3.8	1,686	1.94	0.39	0.23	0.18	0.12
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,281	1.94	0.53	0.31	0.24	0.17
East-West Road	3.3	2.6	2.2	1.7	2,219	1.94	0.14	0.11	0.09	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.7	3.6
25 Feet from Roadway Edge	5.3	5.4	3.4
50 Feet from Roadway Edge	5.2	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Edinger Ave
Analysis Condition: Existing

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Edinger Ave	At Grade	8	35

A.M. Peak Hour Traffic Volumes

N	418	2,486	614	E
W	<	v	>	
228 ^				307
855 >				320
171 v				92
	<	^	>	
S	152	2,100	455	

P.M. Peak Hour Traffic Volumes

N	827	2,537	385	E
W	<	v	>	
360 ^				282
726 >				648
345 v				250
	<	^	>	
S	551	2,455	606	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 6,153
E-W Road: 2,643

N-S Road: 6,846
E-W Road: 3,457

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,153	1.94	1.02	0.68	0.55	0.41
East-West Road	2.6	2.2	1.9	1.6	2,643	1.94	0.13	0.11	0.10	0.08
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,846	1.94	1.13	0.76	0.61	0.45
East-West Road	2.6	2.2	1.9	1.6	3,457	1.94	0.17	0.15	0.13	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.1	6.3	4.0
25 Feet from Roadway Edge	5.8	5.9	3.7
50 Feet from Roadway Edge	5.6	5.7	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Newland St and Edinger Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Newland St	At Grade	4	35
East-West Roadway: Edinger Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	102	755	188	E
W	<	v	>	
111 ^				78
916 >				615
107 v				234
	<	^	>	
S	191	465	158	

P.M. Peak Hour Traffic Volumes

N	85	658	157	E
W	<	v	>	
116 ^				200
691 >				814
96 v				202
	<	^	>	
S	121	815	90	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,910
E-W Road: 2,189

N-S Road: 2,031
E-W Road: 2,154

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference	CO	Concentrations		Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,910	1.94	0.12	0.10	0.08	0.06
East-West Road	11.9	7.0	5.4	3.8	2,189	1.94	0.51	0.30	0.23	0.16
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,031	1.94	0.13	0.10	0.09	0.07
East-West Road	11.9	7.0	5.4	3.8	2,154	1.94	0.50	0.29	0.23	0.16

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	5.6	3.5
25 Feet from Roadway Edge	5.4	5.4	3.4
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Heil Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Heil Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	312	2,577	78	E
W	<	v	>	
193	^		^	76
553	>		<	306
234	v		v	52
	<	^	>	
S	153	2,321	27	

P.M. Peak Hour Traffic Volumes

N	262	2,568	163	E
W	<	v	>	
282	^		^	124
406	>		<	347
182	v		v	56
	<	^	>	
S	217	2,668	51	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 5,557
E-W Road: 1,751

N-S Road: 6,067
E-W Road: 1,696

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,557	1.94	0.92	0.62	0.50	0.37
East-West Road	3.3	2.6	2.2	1.7	1,751	1.94	0.11	0.09	0.07	0.06
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,067	1.94	1.00	0.67	0.54	0.40
East-West Road	3.3	2.6	2.2	1.7	1,696	1.94	0.11	0.09	0.07	0.06

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.1	3.9
25 Feet from Roadway Edge	5.7	5.8	3.6
50 Feet from Roadway Edge	5.6	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Goldenwest St	At Grade	6	35
East-West Roadway: Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	70	480	133	E
W	<	v	>	
190	^		^	136
1,489	>		<	758
196	v		v	84
	<	^	>	
	144	494	95	S

P.M. Peak Hour Traffic Volumes

N	256	520	153	E
W	<	v	>	
232	^		^	254
1,119	>		<	1,528
302	v		v	113
	<	^	>	
	255	789	84	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,503
E-W Road: 2,847

N-S Road: 2,204
E-W Road: 3,692

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,503	1.94	0.08	0.07	0.06	0.05
East-West Road	11.9	7.0	5.4	3.8	2,847	1.94	0.66	0.39	0.30	0.21
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,204	1.94	0.12	0.10	0.09	0.07
East-West Road	11.9	7.0	5.4	3.8	3,692	1.94	0.85	0.50	0.39	0.27

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	6.0	3.8
25 Feet from Roadway Edge	5.5	5.6	3.5
50 Feet from Roadway Edge	5.4	5.5	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Warner Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	292	1,856	282	E
W	<	v	>	
	332	^		68
	1,232	>	<	725
	151	v		318
	<	^	>	
S	190	1,450	192	

P.M. Peak Hour Traffic Volumes

N	490	2,073	283	E
W	<	v	>	
	446	^		263
	1,084	>	<	1,178
	271	v		322
	<	^	>	
S	355	2,417	266	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,280
E-W Road: 2,922

N-S Road: 5,972
E-W Road: 3,824

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,280	1.94	0.71	0.47	0.38	0.28
East-West Road	2.8	2.3	2.0	1.7	2,922	1.94	0.16	0.13	0.11	0.10
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,972	1.94	0.99	0.66	0.53	0.39
East-West Road	2.8	2.3	2.0	1.7	3,824	1.94	0.21	0.17	0.15	0.13

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.9	6.2	3.9
25 Feet from Roadway Edge	5.6	5.8	3.7
50 Feet from Roadway Edge	5.5	5.7	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Newland St and Warner Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Newland St	At Grade	4	35
East-West Roadway:	Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	265	811	289	E
W	<	v	>	
55	^		^	171
2,028	>		<	845
117	v		v	200
	<	^	>	
S	122	544	201	

P.M. Peak Hour Traffic Volumes

N	121	535	160	E
W	<	v	>	
121	^		^	310
1,339	>		<	1,462
100	v		v	231
	<	^	>	
S	152	869	126	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,135
E-W Road: 3,734

N-S Road: 2,116
E-W Road: 3,628

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,135	1.94	0.14	0.11	0.09	0.07
East-West Road	9.5	6.1	4.9	3.5	3,734	1.94	0.69	0.44	0.36	0.25
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,116	1.94	0.14	0.11	0.09	0.07
East-West Road	9.5	6.1	4.9	3.5	3,628	1.94	0.67	0.43	0.35	0.25

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.8	5.8	3.7
25 Feet from Roadway Edge	5.6	5.5	3.5
50 Feet from Roadway Edge	5.4	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Goldenwest St	At Grade	6	35
East-West Roadway:	Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	68	894	311	E
W	<	v	>	
90 ^				148
904 >				524
151 v				54
	<	^	>	
S	102	1,001	171	

P.M. Peak Hour Traffic Volumes

N	95	1,012	266	E
W	<	v	>	
55 ^				323
518 >				983
215 v				94
	<	^	>	
S	252	1,289	85	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,512
E-W Road: 2,112

N-S Road: 3,040
E-W Road: 2,269

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,512	1.94	0.46	0.30	0.24	0.17
East-West Road	3.3	2.6	2.2	1.7	2,112	1.94	0.14	0.11	0.09	0.07
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,040	1.94	0.56	0.36	0.29	0.21
East-West Road	3.3	2.6	2.2	1.7	2,269	1.94	0.15	0.11	0.10	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	5.7	3.6
25 Feet from Roadway Edge	5.4	5.5	3.4
50 Feet from Roadway Edge	5.3	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Slater
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	228	2,008	210	E
W	<	v	>	
182 ^				92
790 >				511
205 v				136
	<	^	>	
S	170	1,570	60	

P.M. Peak Hour Traffic Volumes

N	194	1,870	188	E
W	<	v	>	
217 ^				170
676 >				599
205 v				207
	<	^	>	
S	210	2,144	106	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,290
E-W Road: 2,086

N-S Road: 4,783
E-W Road: 2,101

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference	CO	Concentrations		Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,290	1.94	0.71	0.48	0.38	0.28
East-West Road	3.3	2.6	2.2	1.7	2,086	1.94	0.13	0.11	0.09	0.07
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,783	1.94	0.79	0.53	0.43	0.32
East-West Road	3.3	2.6	2.2	1.7	2,101	1.94	0.13	0.11	0.09	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.8	5.9	3.7
25 Feet from Roadway Edge	5.6	5.6	3.5
50 Feet from Roadway Edge	5.5	5.5	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2016

Roadway Data

Intersection: Gothard St and Talbert Ave
Analysis Condition: 2016

		Roadway Type	No. of Lanes	Average Speed	
				A.M.	P.M.
North-South Roadway:	Gothard St	At Grade	4	35	35
East-West Roadway:	Talbert Ave	At Grade	4	35	35

A.M. Peak Hour Traffic Volumes

	N			E
		41	399	284
W	<	v	>	
	17 ^			^ 269
	110 >			< 197
	10 v			v 160
		<	^	>
		28	537	248
S				

P.M. Peak Hour Traffic Volumes

	N			E
W	<	32 613 406	>	
		v		
59 ^				509
252 >				200
44 v				288
S	<	28 705 229	>	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,547
E-W Road: 1,268

N-S Road: 2,324
E-W Road: 1,884

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	1,547	1.94	0.36	0.21	0.16	0.11
East-West Road	3.3	2.6	2.2	1.7	1,268	1.94	0.08	0.06	0.05	0.04
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,324	1.94	0.54	0.32	0.24	0.17
East-West Road	3.3	2.6	2.2	1.7	1,884	1.94	0.12	0.10	0.08	0.06

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$
$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	5.4	5.7	3.6
25 Feet from Roadway Edge	5.3	5.4	3.4
50 Feet from Roadway Edge	5.2	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Talbert
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Talbert Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	191	1,794	297	E
W	<	v	>	
97 ^				165
447 >				429
176 v				232
	<	^	>	
S	291	1,569	220	

P.M. Peak Hour Traffic Volumes

N	159	2,160	323	E
W	<	v	>	
205 ^				379
581 >				513
178 v				308
	<	^	>	
S	217	2,110	306	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,282
E-W Road: 1,790

N-S Road: 5,336
E-W Road: 2,410

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,282	1.94	0.71	0.47	0.38	0.28
East-West Road	2.8	2.3	2.0	1.7	1,790	1.94	0.10	0.08	0.07	0.06
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,336	1.94	0.88	0.59	0.48	0.35
East-West Road	2.8	2.3	2.0	1.7	2,410	1.94	0.13	0.11	0.09	0.08

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.8	6.0	3.8
25 Feet from Roadway Edge	5.6	5.7	3.6
50 Feet from Roadway Edge	5.5	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Newland St and Talbert Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Newland St	At Grade	4	35
East-West Roadway:	Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	116	603	158	E
W	<	v	>	
75 ^				93
929 >				495
84 v				63
	<	^	>	
S	193	679	155	

P.M. Peak Hour Traffic Volumes

N	88	653	203	E
W	<	v	>	
262 ^				196
849 >				1,004
169 v				103
	<	^	>	
S	198	731	94	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,777
E-W Road: 1,893

N-S Road: 2,133
E-W Road: 2,570

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,777	1.94	0.11	0.09	0.08	0.06
East-West Road	11.9	7.0	5.4	3.8	1,893	1.94	0.44	0.26	0.20	0.14
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,133	1.94	0.14	0.11	0.09	0.07
East-West Road	11.9	7.0	5.4	3.8	2,570	1.94	0.59	0.35	0.27	0.19

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	5.7	3.6
25 Feet from Roadway Edge	5.3	5.5	3.4
50 Feet from Roadway Edge	5.3	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Garfield Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Garfield Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	112	1,246	225	E
W	<	v	>	
192	^		^	134
603	>		<	369
230	v		v	114
	<	^	>	
S	174	1,303	87	

P.M. Peak Hour Traffic Volumes

N	191	1,586	240	E
W	<	v	>	
293	^		^	219
546	>		<	611
283	v		v	152
	<	^	>	
S	315	1,723	151	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,212
E-W Road: 1,680

N-S Road: 4,252
E-W Road: 2,239

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,212	1.94	0.59	0.38	0.31	0.22
East-West Road	3.3	2.6	2.2	1.7	1,680	1.94	0.11	0.08	0.07	0.06
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,252	1.94	0.78	0.50	0.40	0.29
East-West Road	3.3	2.6	2.2	1.7	2,239	1.94	0.14	0.11	0.10	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.9	3.7
25 Feet from Roadway Edge	5.5	5.6	3.5
50 Feet from Roadway Edge	5.4	5.5	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Brookhurst St and Garfield Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
At Grade	6	35	35
At Grade	4	35	35

North-South Roadway: Brookhurst St
East-West Roadway: Garfield Ave

A.M. Peak Hour Traffic Volumes

N	86	876	48	E
W	<	v	>	
425 ^				118
590 >				261
166 v				122
	<	^	>	
	90	1,241	123	
S				

P.M. Peak Hour Traffic Volumes

N	416	1,472	78	E
W	<	v	>	
323 ^				124
362 >				468
205 v				192
	<	^	>	
	240	1,693	89	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,794
E-W Road: 1,618

N-S Road: 4,106
E-W Road: 2,014

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,794	1.94	0.52	0.33	0.27	0.19
East-West Road	3.3	2.6	2.2	1.7	1,618	1.94	0.10	0.08	0.07	0.05
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,106	1.94	0.76	0.49	0.39	0.28
East-West Road	3.3	2.6	2.2	1.7	2,014	1.94	0.13	0.10	0.09	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	5.9	3.7
25 Feet from Roadway Edge	5.4	5.6	3.5
50 Feet from Roadway Edge	5.3	5.5	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Ward St and Garfield Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Ward St	At Grade	2	35
East-West Roadway:	Garfield Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	194	254	30	E
W	<	v	>	
615	^			20
30	>		<	20
29	v		v	10
	<	^	>	
	9	627	10	
S				

P.M. Peak Hour Traffic Volumes

N	440	491	0	E
W	<	v	>	
257	^			40
10	>		<	30
40	v		v	10
	<	^	>	
	21	388	10	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,740
E-W Road: 897

N-S Road: 1,616
E-W Road: 798

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,740	1.94	0.47	0.26	0.19	0.14
East-West Road	3.3	2.6	2.2	1.7	897	1.94	0.06	0.05	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,616	1.94	0.44	0.24	0.18	0.13
East-West Road	3.3	2.6	2.2	1.7	798	1.94	0.05	0.04	0.03	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.5	3.5
25 Feet from Roadway Edge	5.3	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Yorktown Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Yorktown Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	118	1,187	103	E
W	<	v	>	E
155	^		^	117
527	>		<	408
225	v		v	145
	<	^	>	
S	137	1,134	153	

P.M. Peak Hour Traffic Volumes

N	155	1,456	196	E
W	<	v	>	E
192	^		^	148
548	>		<	547
104	v		v	149
	<	^	>	
S	237	1,785	214	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,981
E-W Road: 1,570

N-S Road: 3,945
E-W Road: 1,802

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,981	1.94	0.55	0.35	0.28	0.20
East-West Road	3.3	2.6	2.2	1.7	1,570	1.94	0.10	0.08	0.07	0.05
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,945	1.94	0.73	0.47	0.38	0.27
East-West Road	3.3	2.6	2.2	1.7	1,802	1.94	0.12	0.09	0.08	0.06

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.8	3.7
25 Feet from Roadway Edge	5.4	5.6	3.5
50 Feet from Roadway Edge	5.4	5.5	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Adams Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	6	35
East-West Roadway:	Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	80	1,006	328	E
W	213	1,072	51	S
	78	802	317	

P.M. Peak Hour Traffic Volumes

N	168	1,157	357	E
W	161	650	55	S
	222	1,122	172	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,714
E-W Road: 2,582

N-S Road: 3,413
E-W Road: 2,861

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,714	1.94	0.50	0.32	0.26	0.18
East-West Road	2.8	2.3	2.0	1.7	2,582	1.94	0.14	0.12	0.10	0.09
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,413	1.94	0.63	0.40	0.32	0.23
East-West Road	2.8	2.3	2.0	1.7	2,861	1.94	0.16	0.13	0.11	0.09

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	5.8	3.6
25 Feet from Roadway Edge	5.4	5.5	3.5
50 Feet from Roadway Edge	5.4	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2016

Roadway Data

Intersection: Magnolia Ave and Adams Ave
Analysis Condition: 2016

		Roadway Type	No. of Lanes	Average Speed	
				A.M.	P.M.
North-South Roadway:	Magnolia Ave	At Grade	4	35	35
East-West Roadway:	Adams Ave	At Grade	6	35	35

A.M. Peak Hour Traffic Volumes

	N			E
W	67	653	246	
	<	v	>	
111 ^				^ 181
1,851 >				< 572
83 v				v 120
	<	^	>	
S	157	696	304	

P.M. Peak Hour Traffic Volumes

	N			
	288	708	279	
W	<	v	>	E
131	^			349
1,036	>		<	1,564
104	v		v	250
	<	^	>	
	193	661	145	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road:	2,013	N-S Road:	2,416
E-W Road:	3,274	E-W Road:	3,623

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,013	1.94	0.13	0.10	0.09	0.07
East-West Road	9.5	6.1	4.9	3.5	3,274	1.94	0.60	0.39	0.31	0.22
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,416	1.94	0.15	0.12	0.10	0.08
East-West Road	9.5	6.1	4.9	3.5	3,623	1.94	0.67	0.43	0.34	0.25

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$
$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	5.7	5.8	3.7
25 Feet from Roadway Edge	5.5	5.6	3.5
50 Feet from Roadway Edge	5.4	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Brookhurst St and Adams Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Brookhurst St	At Grade	6	35
East-West Roadway: Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	122	948	499	E
W	<	v	>	
230	^		^	254
2,352	>		<	564
75	v		v	230
	<	^	>	
S	126	806	565	

P.M. Peak Hour Traffic Volumes

N	163	1,270	448	E
W	<	v	>	
304	^		^	375
1,083	>		<	2,129
96	v		v	431
	<	^	>	
S	288	1,247	251	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,859
E-W Road: 4,464

N-S Road: 3,807
E-W Road: 4,717

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,859	1.94	0.16	0.13	0.11	0.09
East-West Road	9.5	6.1	4.9	3.5	4,464	1.94	0.82	0.53	0.43	0.30
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	3,807	1.94	0.21	0.17	0.15	0.13
East-West Road	9.5	6.1	4.9	3.5	4,717	1.94	0.87	0.56	0.45	0.32

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.1	3.9
25 Feet from Roadway Edge	5.7	5.7	3.6
50 Feet from Roadway Edge	5.5	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Atlanta Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Atlanta Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	139	639	277	E
W	<	v	>	
151 ^				264
653 >				449
65 v				80
	<	^	>	
	17	406	65	
S				

P.M. Peak Hour Traffic Volumes

N	138	518	400	E
W	<	v	>	
173 ^				291
463 >				695
31 v				40
	<	^	>	
	81	923	87	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,876
E-W Road: 1,788

N-S Road: 2,443
E-W Road: 1,976

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	1,876	1.94	0.35	0.22	0.18	0.13
East-West Road	3.3	2.6	2.2	1.7	1,788	1.94	0.11	0.09	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,443	1.94	0.45	0.29	0.23	0.17
East-West Road	3.3	2.6	2.2	1.7	1,976	1.94	0.13	0.10	0.08	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.6	3.5
25 Feet from Roadway Edge	5.3	5.4	3.4
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Brookhurst St and PCH
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Brookhurst St	At Grade	6	35
East-West Roadway: PCH	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	106	10	518	E
W	<	v	>	
234	^		^	271
2,444	>		<	891
10	v		v	10
	<	^	>	
	10	10	10	
S				

P.M. Peak Hour Traffic Volumes

N	175	20	259	E
W	<	v	>	
190	^		^	737
1,072	>		<	2,897
10	v		v	20
	<	^	>	
	10	10	10	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,149
E-W Road: 4,144

N-S Road: 1,391
E-W Road: 4,995

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,149	1.94	0.06	0.05	0.04	0.04
East-West Road	9.5	6.1	4.9	3.5	4,144	1.94	0.76	0.49	0.39	0.28
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,391	1.94	0.08	0.06	0.05	0.05
East-West Road	9.5	6.1	4.9	3.5	4,995	1.94	0.92	0.59	0.48	0.34

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.8	6.0	3.8
25 Feet from Roadway Edge	5.5	5.7	3.6
50 Feet from Roadway Edge	5.4	5.5	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Westminster Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Westminster Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	154	3,096	237	E
W	<	v	>	
215 ^				137
626 >				494
167 v				158
	<	^	>	
S	217	1,997	75	

P.M. Peak Hour Traffic Volumes

N	160	2,420	239	E
W	<	v	>	
274 ^				226
640 >				617
183 v				241
	<	^	>	
S	359	2,700	116	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 5,836
E-W Road: 1,873

N-S Road: 6,019
E-W Road: 2,233

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,836	1.94	0.96	0.65	0.52	0.39
East-West Road	2.8	2.3	2.0	1.7	1,873	1.94	0.10	0.08	0.07	0.06
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,019	1.94	0.99	0.67	0.54	0.40
East-West Road	2.8	2.3	2.0	1.7	2,233	1.94	0.12	0.10	0.09	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.1	6.1	3.9
25 Feet from Roadway Edge	5.7	5.8	3.6
50 Feet from Roadway Edge	5.6	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and Bolsa Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Bolsa Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	272	2,396	158	E
W	<	v	>	
208 ^				199
605 >				595
508 v				165
	<	^	>	
	339	2,267	24	S

P.M. Peak Hour Traffic Volumes

N	252	2,471	241	E
W	<	v	>	
361 ^				284
618 >				758
402 v				172
	<	^	>	
	268	2,727	50	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 5,699
E-W Road: 2,527

N-S Road: 6,336
E-W Road: 2,659

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,699	1.94	0.94	0.63	0.51	0.38
East-West Road	3.3	2.6	2.2	1.7	2,527	1.94	0.16	0.13	0.11	0.08
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,336	1.94	1.05	0.70	0.57	0.42
East-West Road	3.3	2.6	2.2	1.7	2,659	1.94	0.17	0.13	0.11	0.09

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.1	6.2	4.0
25 Feet from Roadway Edge	5.8	5.8	3.7
50 Feet from Roadway Edge	5.6	5.7	3.6

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Beach Blvd and McFadden Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: McFadden Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	285	2,515	211	E
W	<	v	>	
	305 ^			178
	427 >		<	518
	131 v		v	408
	<	^	>	
S	198	2,240	200	

P.M. Peak Hour Traffic Volumes

N	276	2,410	243	E
W	<	v	>	
	345 ^			191
	514 >		<	544
	160 v		v	480
	<	^	>	
S	268	2,548	253	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 5,734
E-W Road: 1,942

N-S Road: 6,119
E-W Road: 2,225

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,734	1.94	0.95	0.64	0.51	0.38
East-West Road	3.3	2.6	2.2	1.7	1,942	1.94	0.12	0.10	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,119	1.94	1.01	0.68	0.55	0.40
East-West Road	3.3	2.6	2.2	1.7	2,225	1.94	0.14	0.11	0.10	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.1	6.2	3.9
25 Feet from Roadway Edge	5.7	5.8	3.7
50 Feet from Roadway Edge	5.6	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Magnolia St and Warner Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Magnolia St	At Grade	4	35
East-West Roadway: Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	153	847	372	E
W	<	v	>	
253 ^				46
1,929 >				858
53 v				184
	<	^	>	
	110	942	345	
S				

P.M. Peak Hour Traffic Volumes

N	242	982	213	E
W	<	v	>	
246 ^				142
1,111 >				1,591
130 v				226
	<	^	>	
	171	766	201	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,613
E-W Road: 3,734

N-S Road: 2,591
E-W Road: 3,491

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,613	1.94	0.17	0.13	0.11	0.09
East-West Road	9.5	6.1	4.9	3.5	3,734	1.94	0.69	0.44	0.36	0.25
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,591	1.94	0.17	0.13	0.11	0.09
East-West Road	9.5	6.1	4.9	3.5	3,491	1.94	0.64	0.41	0.33	0.24

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.9	5.8	3.7
25 Feet from Roadway Edge	5.6	5.5	3.5
50 Feet from Roadway Edge	5.5	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Magnolia St and Talbert Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
At Grade	4	35	35
At Grade	4	35	35

A.M. Peak Hour Traffic Volumes

N	83	784	291	E
W	<	v	>	
145 ^				225
951 >				475
56 v				107
	<	^	>	
S	45	854	260	

P.M. Peak Hour Traffic Volumes

N	150	854	142	E
W	<	v	>	
196 ^				189
672 >				942
110 v				202
	<	^	>	
S	122	920	129	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,382
E-W Road: 2,309

N-S Road: 2,451
E-W Road: 2,276

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,382	1.94	0.55	0.32	0.25	0.18
East-West Road	3.3	2.6	2.2	1.7	2,309	1.94	0.15	0.12	0.10	0.08
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,451	1.94	0.57	0.33	0.26	0.18
East-West Road	3.3	2.6	2.2	1.7	2,276	1.94	0.15	0.11	0.10	0.08

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.7	5.7	3.6
25 Feet from Roadway Edge	5.4	5.4	3.4
50 Feet from Roadway Edge	5.3	5.4	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Bushard St and Talbert Ave
Analysis Condition: 2016

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Bushard St	At Grade	4	35
East-West Roadway: Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	132	393	199	E
W	<	v	>	
176 ^				130
1,294 >				506
101 v				95
	<	^	>	
S	108	424	142	

P.M. Peak Hour Traffic Volumes

N	63	550	102	E
W	<	v	>	
125 ^				168
730 >				1,461
116 v				146
	<	^	>	
S	131	654	130	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,454
E-W Road: 2,366

N-S Road: 1,727
E-W Road: 2,737

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,454	1.94	0.09	0.07	0.06	0.05
East-West Road	11.9	7.0	5.4	3.8	2,366	1.94	0.55	0.32	0.25	0.17
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,727	1.94	0.11	0.09	0.07	0.06
East-West Road	11.9	7.0	5.4	3.8	2,737	1.94	0.63	0.37	0.29	0.20

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.6	5.7	3.6
25 Feet from Roadway Edge	5.4	5.5	3.4
50 Feet from Roadway Edge	5.3	5.4	3.4

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2016

Roadway Data

Intersection: Brookhurst St and Talbert Ave
Analysis Condition: 2016

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Brookhurst St	At Grade	6	35
East-West Roadway:	Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	450	679	748	E
W	<	v	>	
207	^		139	
1,408	>		<	468
10	v		v	233
	<	^	>	
	114	1,173	530	S

P.M. Peak Hour Traffic Volumes

N	374	1,474	375	E
W	<	v	>	
326	^		444	
889	>		<	1,147
172	v		v	749
	<	^	>	
	140	1,295	451	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,396
E-W Road: 3,526

N-S Road: 4,288
E-W Road: 4,055

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	3,396	1.94	0.18	0.15	0.13	0.11
East-West Road	11.9	7.0	5.4	3.8	3,526	1.94	0.82	0.48	0.37	0.26
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,288	1.94	0.79	0.51	0.41	0.29
East-West Road	3.3	2.6	2.2	1.7	4,055	1.94	0.26	0.20	0.17	0.13

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	6.0	6.1	3.8
25 Feet from Roadway Edge	5.6	5.7	3.6
50 Feet from Roadway Edge	5.5	5.6	3.5

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Springdale St and Bolsa Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Springdale St	At Grade	6	35
East-West Roadway: Bolsa Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	170	1,400	240	E
W	<	v	>	
50	^		^	230
270	>		<	900
40	v		v	350
S	<	^	>	
	150	820	120	

P.M. Peak Hour Traffic Volumes

N	50	950	190	E
W	<	v	>	
170	^		^	170
1,290	>		<	510
110	v		v	270
S	<	^	>	
	50	810	180	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,910
E-W Road: 2,110

N-S Road: 2,370
E-W Road: 2,610

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,910	0.84	0.23	0.15	0.12	0.09
East-West Road	3.3	2.6	2.2	1.7	2,110	0.84	0.06	0.05	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,370	0.84	0.06	0.05	0.04	0.03
East-West Road	11.9	7.0	5.4	3.8	2,610	0.84	0.26	0.15	0.12	0.08

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Project Number: 100000407
Project Title: Beach Edinger

Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2030

Intersection: Goldenwest St and Bolsa Ave
Analysis Condition: 2030

A.M. Peak Hour Traffic Volumes

P.M. Peak Hour Traffic Volumes

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,990
E-W Road: 3,490

N-S Road: 4,270
E-W Road: 3,610

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,990	0.84	0.32	0.20	0.16	0.12
East-West Road	2.8	2.3	2.0	1.7	3,490	0.84	0.08	0.07	0.06	0.05
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,270	0.84	0.34	0.22	0.18	0.13
East-West Road	2.8	2.3	2.0	1.7	3,610	0.84	0.08	0.07	0.06	0.05

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).
$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

	A.M. <u>Peak Hour</u>	P.M. <u>Peak Hour</u>	<u>8-Hour</u>
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.3	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Springdale St and McFadden Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Springdale St	At Grade	6	35
East-West Roadway:	McFadden Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	180	1,010	180	E
W	<	v	>	
60 ^				140
240 >				610
90 v				250
	<	^	>	
	290	740	100	S

P.M. Peak Hour Traffic Volumes

N	140	1,050	300	E
W	<	v	>	
330 ^				130
860 >				500
130 v				140
	<	^	>	
	140	950	200	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,480
E-W Road: 1,520

N-S Road: 2,900
E-W Road: 2,130

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,480	0.84	0.20	0.13	0.10	0.07
East-West Road	3.3	2.6	2.2	1.7	1,520	0.84	0.04	0.03	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,900	0.84	0.23	0.15	0.12	0.09
East-West Road	3.3	2.6	2.2	1.7	2,130	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.1	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

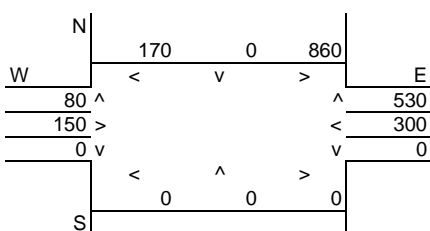
Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

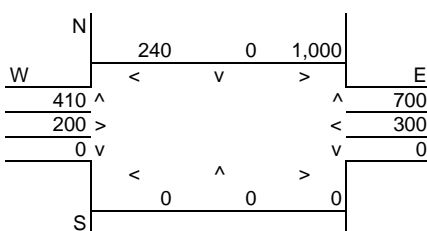
Intersection: I-405 SB Ramps and Center Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: I-405 SB Ramps	At Grade	4	35
East-West Roadway: Center Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,640
E-W Road: 1,840

N-S Road: 2,350
E-W Road: 2,200

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,640	0.84	0.05	0.04	0.03	0.02
East-West Road	11.9	7.0	5.4	3.8	1,840	0.84	0.18	0.11	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,350	0.84	0.23	0.14	0.11	0.08
East-West Road	3.3	2.6	2.2	1.7	2,200	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	5.3	3.3
25 Feet from Roadway Edge	5.1	5.2	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Edinger Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Edinger Ave	At Grade	8	35

A.M. Peak Hour Traffic Volumes

N	440	2,570	690	E
W	<	v	>	
180 ^				300
920 >				370
140 v				100
	<	^	>	
S	140	2,300	430	

P.M. Peak Hour Traffic Volumes

N	910	2,630	390	E
W	<	v	>	
360 ^				290
770 >				670
320 v				280
	<	^	>	
S	560	2,590	640	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 6,480
E-W Road: 2,810

N-S Road: 7,170
E-W Road: 3,590

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference	CO	Concentrations		Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,480	0.84	0.46	0.31	0.25	0.19
East-West Road	2.6	2.2	1.9	1.6	2,810	0.84	0.06	0.05	0.04	0.04
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	7,170	0.84	0.51	0.34	0.28	0.20
East-West Road	2.6	2.2	1.9	1.6	3,590	0.84	0.08	0.07	0.06	0.05

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.6	3.5
25 Feet from Roadway Edge	5.4	5.4	3.4
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Newland St and Edinger Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Newland St	At Grade	4	35
East-West Roadway:	Edinger Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	120	900	180	E
W	<	v	>	
130 ^				90
930 >				650
120 v				210
	<	^	>	
S	200	470	180	

P.M. Peak Hour Traffic Volumes

N	80	690	200	E
W	<	v	>	
80 ^				210
730 >				860
100 v				230
	<	^	>	
S	130	900	100	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,080
E-W Road: 2,240

N-S Road: 2,160
E-W Road: 2,330

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,080	0.84	0.06	0.05	0.04	0.03
East-West Road	11.9	7.0	5.4	3.8	2,240	0.84	0.22	0.13	0.10	0.07
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,160	0.84	0.06	0.05	0.04	0.03
East-West Road	11.9	7.0	5.4	3.8	2,330	0.84	0.23	0.14	0.11	0.07

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

Project Number: 100000407
Project Title: Beach Edinger

Nearest Air Monitoring Station measuring CO:	Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm):	5.0
Background 8-hour CO Concentration (ppm):	3.1
Persistence Factor:	0.7
Analysis Year:	2030

Intersection: Beach Blvd and Heil Ave
Analysis Condition: 2030

A.M. Peak Hour Traffic Volumes



N-S Road: 6,210
E-W Road: 1,910

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).
$$\text{Peak Hour Emissions} = \text{North-South Concentration} + \text{East-West Concentration} + \text{Background 1-hour Concentration}^2$$

$$\text{8-Hour Emissions} = ((\text{Highest Peak Hour Concentration} - \text{Background 1-hour Concentration}) \times \text{Persistence Factor}) + \text{Background 8-hour Concentration}^2$$

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Goldenwest St	At Grade	6	35
East-West Roadway: Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	80	540	140	E
W	<	v	>	
190	^		140	
1,560	>		<	770
210	v		v	90
	<	^	>	
	150	560	90	S

P.M. Peak Hour Traffic Volumes

N	320	460	150	E
W	<	v	>	
240	^		270	
1,130	>		<	1,500
310	v		v	140
	<	^	>	
	280	800	80	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,650
E-W Road: 2,960

N-S Road: 2,240
E-W Road: 3,780

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission	Factors ²			
	Edge	25 Feet	50 Feet	100 Feet	Volume		Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,650	0.84	0.04	0.03	0.03	0.02
East-West Road	11.9	7.0	5.4	3.8	2,960	0.84	0.30	0.17	0.13	0.09
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,240	0.84	0.05	0.04	0.04	0.03
East-West Road	11.9	7.0	5.4	3.8	3,780	0.84	0.38	0.22	0.17	0.12

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Warner Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	330	1,830	290	E
W	<	v	>	E
350	^		^	50
1,240	>		<	740
150	v		v	360
	<	^	>	
S	210	1,530	230	

P.M. Peak Hour Traffic Volumes

N	470	2,080	260	E
W	<	v	>	E
430	^		^	320
1,130	>		<	1,200
270	v		v	290
	<	^	>	
S	350	2,470	240	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,380
E-W Road: 3,020

N-S Road: 6,030
E-W Road: 3,850

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,380	0.84	0.31	0.21	0.17	0.13
East-West Road	2.8	2.3	2.0	1.7	3,020	0.84	0.07	0.06	0.05	0.04
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,030	0.84	0.43	0.29	0.23	0.17
East-West Road	2.8	2.3	2.0	1.7	3,850	0.84	0.09	0.07	0.06	0.05

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.5	3.5
25 Feet from Roadway Edge	5.3	5.4	3.4
50 Feet from Roadway Edge	5.2	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Newland St and Warner Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Newland St	At Grade	4	35
East-West Roadway: Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	360	790	280	E
W	<	v	>	
50	^		^	210
2,110	>		<	820
120	v		v	220
S	<	^	>	
	130	520	240	

P.M. Peak Hour Traffic Volumes

N	140	550	160	E
W	<	v	>	
130	^		^	360
1,400	>		<	1,500
100	v		v	300
S	<	^	>	
	150	850	180	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,210
E-W Road: 3,880

N-S Road: 2,190
E-W Road: 3,900

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,210	0.84	0.06	0.05	0.04	0.03
East-West Road	9.5	6.1	4.9	3.5	3,880	0.84	0.31	0.20	0.16	0.11
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,190	0.84	0.06	0.05	0.04	0.03
East-West Road	9.5	6.1	4.9	3.5	3,900	0.84	0.31	0.20	0.16	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Goldenwest St	At Grade	6	35
East-West Roadway: Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	80	970	310	E
W	<	v	>	
100 ^				190
920 >				550
200 v				60
	<	^	>	
	90	1,050	240	
S				

P.M. Peak Hour Traffic Volumes

N	100	1,020	290	E
W	<	v	>	
60 ^				300
510 >				1,030
300 v				110
	<	^	>	
	230	1,420	100	
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,700
E-W Road: 2,270

N-S Road: 3,190
E-W Road: 2,340

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,700	0.84	0.22	0.14	0.11	0.08
East-West Road	3.3	2.6	2.2	1.7	2,270	0.84	0.06	0.05	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,190	0.84	0.25	0.16	0.13	0.09
East-West Road	3.3	2.6	2.2	1.7	2,340	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Gothard St and Slater Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Gothard St	At Grade	4	35
East-West Roadway:	Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	110	630	200	E
W	<	v	>	
300	^		^	160
1,210	>		<	560
260	v		v	110
	<	^	>	
	340	570	90	S

P.M. Peak Hour Traffic Volumes

N	70	660	130	E
W	<	v	>	
80	^		^	170
590	>		<	750
130	v		v	110
	<	^	>	
	300	830	140	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,000
E-W Road: 2,780

N-S Road: 2,170
E-W Road: 1,920

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission					
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,000	0.84	0.06	0.04	0.04	0.03
East-West Road	11.9	7.0	5.4	3.8	2,780	0.84	0.28	0.16	0.13	0.09
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,170	0.84	0.22	0.13	0.10	0.07
East-West Road	3.3	2.6	2.2	1.7	1,920	0.84	0.05	0.04	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.2	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Slater
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	220	2,130	200	E
W	<	v	>	
170	^		^	100
800	>		<	580
210	v		v	110
	<	^	>	
S	170	1,650	70	

P.M. Peak Hour Traffic Volumes

N	210	1,860	200	E
W	<	v	>	
210	^		^	180
730	>		<	600
200	v		v	200
	<	^	>	
S	250	2,210	130	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,470
E-W Road: 2,150

N-S Road: 4,870
E-W Road: 2,200

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,470	0.84	0.32	0.21	0.17	0.13
East-West Road	3.3	2.6	2.2	1.7	2,150	0.84	0.06	0.05	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,870	0.84	0.35	0.23	0.19	0.14
East-West Road	3.3	2.6	2.2	1.7	2,200	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.3	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Gothard St and Talbert Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Gothard St	At Grade	4	35
East-West Roadway:	Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	50	440	2,909	E
W	<	v	>	
20 ^				290
130 >				< 290
10 v				v 160
	<	^	>	
S	40	580	290	

P.M. Peak Hour Traffic Volumes

N	40	630	390	E
W	<	v	>	
70 ^				490
330 >				< 220
60 v				v 310
	<	^	>	
S	30	760	240	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,289
E-W Road: 4,069

N-S Road: 2,380
E-W Road: 1,980

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	4,289	0.84	0.43	0.25	0.19	0.14
East-West Road	3.3	2.6	2.2	1.7	4,069	0.84	0.11	0.09	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,380	0.84	0.24	0.14	0.11	0.08
East-West Road	3.3	2.6	2.2	1.7	1,980	0.84	0.05	0.04	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.3	3.5
25 Feet from Roadway Edge	5.3	5.2	3.3
50 Feet from Roadway Edge	5.3	5.1	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Talbert
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Talbert Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	220	1,820	300	E
W	<	v	>	
100 ^				170
490 >				450
160 v				250
	<	^	>	
	350	1,590	190	S

P.M. Peak Hour Traffic Volumes

N	190	2,110	330	E
W	<	v	>	
220 ^				310
530 >				520
210 v				400
	<	^	>	
	220	2,130	320	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 4,360
E-W Road: 1,850

N-S Road: 5,390
E-W Road: 2,410

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	4,360	0.84	0.31	0.21	0.17	0.12
East-West Road	2.8	2.3	2.0	1.7	1,850	0.84	0.04	0.04	0.03	0.03
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,390	0.84	0.38	0.26	0.21	0.15
East-West Road	2.8	2.3	2.0	1.7	2,410	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Newland St and Talbert Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Newland St	At Grade	4	35
East-West Roadway:	Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	130	620	170	E
W	<	v	>	
50 ^				120
950 >				< 500
90 v				v 70
	<	^	>	
S	220	710	180	

P.M. Peak Hour Traffic Volumes

N	100	660	260	E
W	<	v	>	
340 ^				200
810 >				< 1,000
170 v				v 110
	<	^	>	
S	210	700	100	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,890
E-W Road: 1,990

N-S Road: 2,260
E-W Road: 2,630

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,890	0.84	0.05	0.04	0.03	0.03
East-West Road	11.9	7.0	5.4	3.8	1,990	0.84	0.20	0.12	0.09	0.06
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,260	0.84	0.06	0.05	0.04	0.03
East-West Road	11.9	7.0	5.4	3.8	2,630	0.84	0.26	0.15	0.12	0.08

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.1	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Garfield Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Garfield Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	130	1,160	250	E
W	<	v	>	
200	^		140	
630	>		<	420
250	v		v	120
	<	^	>	
	180	1,370	90	S

P.M. Peak Hour Traffic Volumes

N	200	1,600	270	E
W	<	v	>	
330	^		160	
520	>		<	640
360	v		v	250
	<	^	>	
	350	1,680	190	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,250
E-W Road: 1,810

N-S Road: 4,430
E-W Road: 2,400

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,250	0.84	0.26	0.17	0.13	0.10
East-West Road	3.3	2.6	2.2	1.7	1,810	0.84	0.05	0.04	0.03	0.03
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,430	0.84	0.35	0.23	0.18	0.13
East-West Road	3.3	2.6	2.2	1.7	2,400	0.84	0.07	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Brookhurst St and Garfield Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
At Grade	6	35	35
At Grade	4	35	35

North-South Roadway: Brookhurst St
East-West Roadway: Garfield Ave

A.M. Peak Hour Traffic Volumes

N	110	950	50	E
W	<	v	>	
510 ^				120
520 >				300
170 v				130
	<	^	>	
S	100	1,310	220	

P.M. Peak Hour Traffic Volumes

N	490	1,580	80	E
W	<	v	>	
360 ^				130
380 >				490
210 v				190
	<	^	>	
S	270	1,760	90	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,050
E-W Road: 1,710

N-S Road: 4,400
E-W Road: 2,200

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,050	0.84	0.24	0.16	0.13	0.09
East-West Road	3.3	2.6	2.2	1.7	1,710	0.84	0.05	0.04	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,400	0.84	0.35	0.23	0.18	0.13
East-West Road	3.3	2.6	2.2	1.7	2,200	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Ward St and Garfield Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Ward St	At Grade	2	35
East-West Roadway: Garfield Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	230	260	30	E
W	<	v	>	E
660 ^				20
30 >				20
30 v				10
	<	^	>	
S	10	620	10	

P.M. Peak Hour Traffic Volumes

N	440	530	0	E
W	<	v	>	E
280 ^				40
10 >				30
40 v				10
	<	^	>	
S	20	630	10	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,820
E-W Road: 980

N-S Road: 1,920
E-W Road: 820

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,820	0.84	0.21	0.12	0.09	0.06
East-West Road	3.3	2.6	2.2	1.7	980	0.84	0.03	0.02	0.02	0.01
P.M. Peak Traffic Hour										
North-South Road	14.0	7.6	5.7	4.0	1,920	0.84	0.23	0.12	0.09	0.06
East-West Road	3.3	2.6	2.2	1.7	820	0.84	0.02	0.02	0.02	0.01

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	5.2	3.3
25 Feet from Roadway Edge	5.1	5.1	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Yorktown Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Yorktown Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	120	1,110	100	E
W	<	v	>	
170	^		^	120
570	>		<	420
180	v		v	160
S	<	^	>	
	120	1,150	190	

P.M. Peak Hour Traffic Volumes

N	160	1,510	200	E
W	<	v	>	
200	^		^	160
590	>		<	640
90	v		v	110
S	<	^	>	
	200	1,720	240	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,910
E-W Road: 1,580

N-S Road: 3,950
E-W Road: 1,940

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,910	0.84	0.23	0.15	0.12	0.09
East-West Road	3.3	2.6	2.2	1.7	1,580	0.84	0.04	0.03	0.03	0.02
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,950	0.84	0.32	0.20	0.16	0.12
East-West Road	3.3	2.6	2.2	1.7	1,940	0.84	0.05	0.04	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.1	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Newland St and Yorktown Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Newland St	At Grade	4	35
East-West Roadway: Yorktown Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	70	660	220	E
W	70	<	>	120
	780	>	<	560
	100	v	v	60
S	90	500	110	

P.M. Peak Hour Traffic Volumes

N	70	650	100	E
W	130	<	>	170
	620	>	<	740
	120	v	v	80
S	90	790	40	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,640
E-W Road: 1,850

N-S Road: 1,910
E-W Road: 1,770

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,640	0.84	0.05	0.04	0.03	0.02
East-West Road	11.9	7.0	5.4	3.8	1,850	0.84	0.18	0.11	0.08	0.06
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	1,910	0.84	0.19	0.11	0.09	0.06
East-West Road	3.3	2.6	2.2	1.7	1,770	0.84	0.05	0.04	0.03	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	5.2	3.3
25 Feet from Roadway Edge	5.1	5.2	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Adams Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	80	1,000	330	E
W	260	1,130	50	S
	80	760	400	

P.M. Peak Hour Traffic Volumes

N	180	1,160	360	E
W	160	730	60	S
	280	1,100	200	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,740
E-W Road: 2,820

N-S Road: 3,470
E-W Road: 3,080

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission	Factors ²			
	Edge	25 Feet	50 Feet	100 Feet	Volume		Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,740	0.84	0.06	0.05	0.05	0.04
East-West Road	9.5	6.1	4.9	3.5	2,820	0.84	0.23	0.14	0.12	0.08
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,470	0.84	0.28	0.18	0.14	0.10
East-West Road	2.8	2.3	2.0	1.7	3,080	0.84	0.07	0.06	0.05	0.04

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Magnolia Ave and Adams Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Magnolia Ave	At Grade	4	35
East-West Roadway: Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	60	660	250	E
W	<	v	>	
110 ^				240
2,010 >				630
90 v				130
	<	^	>	
S	180	720	320	

P.M. Peak Hour Traffic Volumes

N	390	710	240	E
W	<	v	>	
130 ^				370
1,160 >				1,570
110 v				320
	<	^	>	
S	200	670	130	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,100
E-W Road: 3,580

N-S Road: 2,510
E-W Road: 3,790

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,100	0.84	0.06	0.05	0.04	0.03
East-West Road	9.5	6.1	4.9	3.5	3,580	0.84	0.29	0.18	0.15	0.11
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,510	0.84	0.07	0.05	0.05	0.04
East-West Road	9.5	6.1	4.9	3.5	3,790	0.84	0.30	0.19	0.16	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Bushard St and Adams Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Bushard St	At Grade	4	35
East-West Roadway: Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	70	510	280	E
W	<	v	>	
150	^		^	80
1,900	>		<	860
140	v		v	90
S	<	^	>	
	110	480	170	

P.M. Peak Hour Traffic Volumes

N	100	320	230	E
W	<	v	>	
120	^		^	390
1,010	>		<	2,140
100	v		v	190
S	<	^	>	
	110	490	60	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,570
E-W Road: 3,380

N-S Road: 1,650
E-W Road: 4,020

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,570	0.84	0.04	0.03	0.03	0.02
East-West Road	9.5	6.1	4.9	3.5	3,380	0.84	0.27	0.17	0.14	0.10
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,650	0.84	0.05	0.04	0.03	0.02
East-West Road	9.5	6.1	4.9	3.5	4,020	0.84	0.32	0.21	0.17	0.12

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Brookhurst St and Adams Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Brookhurst St	At Grade	6	35
East-West Roadway:	Adams Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	130	930	500	E
W	<	v	>	
250 ^				280
2,530 >				660
70 v				240
	<	^	>	
S	130	860	630	

P.M. Peak Hour Traffic Volumes

N	160	1,340	480	E
W	<	v	>	
340 ^				380
1,200 >				2,330
90 v				470
	<	^	>	
S	290	1,280	300	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,950
E-W Road: 4,840

N-S Road: 3,980
E-W Road: 5,160

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,950	0.84	0.07	0.06	0.05	0.04
East-West Road	9.5	6.1	4.9	3.5	4,840	0.84	0.39	0.25	0.20	0.14
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	3,980	0.84	0.09	0.08	0.07	0.06
East-West Road	9.5	6.1	4.9	3.5	5,160	0.84	0.41	0.26	0.21	0.15

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.5	3.5
25 Feet from Roadway Edge	5.3	5.3	3.3
50 Feet from Roadway Edge	5.2	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Atlanta Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	6	35
East-West Roadway: Atlanta Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	170	640	280	E
W	<	v	>	
180 ^				260
790 >				520
80 v				50
	<	^	>	
S	20	430	70	

P.M. Peak Hour Traffic Volumes

N	150	500	420	E
W	<	v	>	
220 ^				270
570 >				840
30 v				30
	<	^	>	
S	90	950	100	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,960
E-W Road: 1,970

N-S Road: 2,510
E-W Road: 2,230

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,960	0.84	0.05	0.04	0.03	0.03
East-West Road	11.9	7.0	5.4	3.8	1,970	0.84	0.20	0.12	0.09	0.06
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	2,510	0.84	0.20	0.13	0.10	0.07
East-West Road	3.3	2.6	2.2	1.7	2,230	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.2	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Brookhurst Ave and Hamilton Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Brookhurst Ave	At Grade	6	35
East-West Roadway: Hamilton Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	120	600	900	E
W	120	<	v	>
	810	>	<	360
	50	v	v	80
S	50	530	310	

P.M. Peak Hour Traffic Volumes

N	60	490	460	E
W	120	<	v	>
	470	>	<	900
	70	v	v	1,110
S	70	640	240	290

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,630
E-W Road: 2,980

N-S Road: 2,670
E-W Road: 3,470

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,630	0.84	0.06	0.05	0.04	0.04
East-West Road	11.9	7.0	5.4	3.8	2,980	0.84	0.30	0.18	0.14	0.10
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	2,670	0.84	0.06	0.05	0.04	0.04
East-West Road	11.9	7.0	5.4	3.8	3,470	0.84	0.35	0.20	0.16	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Seapoint Ave and PCH
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Seapoint Ave	At Grade	2	35
East-West Roadway: PCH	At Grade	4	35

A.M. Peak Hour Traffic Volumes

	N				
W		440	0	100	E
		<	v	>	
		170	^		30
		2,160	>		<
		0	v		1,380
				v	0
		<	^	>	
		0	0	0	
	S				

P.M. Peak Hour Traffic Volumes

	N				
W		250	0	30	E
		<	v	>	
		390	^		90
		1,380	>		<
		0	v		1,750
				v	0
		<	^	>	
		0	0	0	
	S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 740
E-W Road: 4,150

N-S Road: 760
E-W Road: 3,770

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	740	0.84	0.02	0.02	0.01	0.01
East-West Road	11.9	7.0	5.4	3.8	4,150	0.84	0.41	0.24	0.19	0.13
P.M. Peak Traffic Hour										
North-South Road	3.7	2.7	2.2	1.7	760	0.84	0.02	0.02	0.01	0.01
East-West Road	11.9	7.0	5.4	3.8	3,770	0.84	0.38	0.22	0.17	0.12

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.3	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

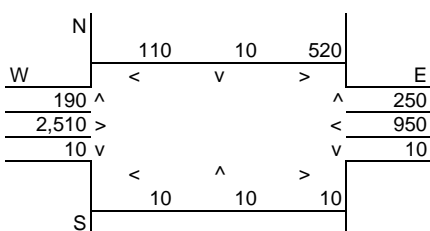
Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

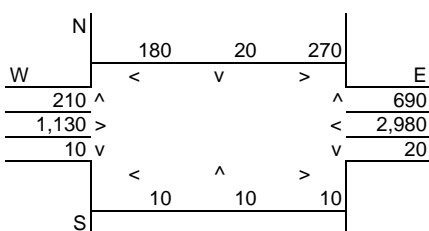
Intersection: Brookhurst St and PCH
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Brookhurst St	At Grade	6	35
East-West Roadway: PCH	At Grade	6	35

A.M. Peak Hour Traffic Volumes



P.M. Peak Hour Traffic Volumes



Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,090
E-W Road: 4,250

N-S Road: 1,380
E-W Road: 5,100

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,090	0.84	0.03	0.02	0.02	0.02
East-West Road	9.5	6.1	4.9	3.5	4,250	0.84	0.34	0.22	0.17	0.12
P.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	1,380	0.84	0.03	0.03	0.02	0.02
East-West Road	9.5	6.1	4.9	3.5	5,100	0.84	0.41	0.26	0.21	0.15

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Westminster Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	Westminster Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	120	3,400	220	E
W	<	v	>	
220 ^				130
660 >				490
190 v				140
	<	^	>	
S	240	2,070	70	

P.M. Peak Hour Traffic Volumes

N	170	2,500	250	E
W	<	v	>	
260 ^				220
650 >				660
210 v				250
	<	^	>	
S	400	2,900	120	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 6,160
E-W Road: 1,920

N-S Road: 6,380
E-W Road: 2,350

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,160	0.84	0.44	0.29	0.24	0.18
East-West Road	2.8	2.3	2.0	1.7	1,920	0.84	0.05	0.04	0.03	0.03
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,380	0.84	0.46	0.31	0.25	0.18
East-West Road	2.8	2.3	2.0	1.7	2,350	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.5	3.5
25 Feet from Roadway Edge	5.3	5.4	3.3
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Hazard Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Hazard Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	120	3,450	120	E
W	50	300	170	E
S	120	150	30	E

P.M. Peak Hour Traffic Volumes

N	60	2,430	160	E
W	110	430	200	E
S	60	130	80	E

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 6,520
E-W Road: 1,090

N-S Road: 6,370
E-W Road: 1,310

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,520	0.84	0.47	0.31	0.25	0.19
East-West Road	3.3	2.6	2.2	1.7	1,090	0.84	0.03	0.02	0.02	0.02
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,370	0.84	0.45	0.30	0.25	0.18
East-West Road	3.3	2.6	2.2	1.7	1,310	0.84	0.04	0.03	0.02	0.02

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.5	3.4
25 Feet from Roadway Edge	5.3	5.3	3.3
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and Bolsa Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Beach Blvd	At Grade	8	35
East-West Roadway: Bolsa Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	350	2,570	160	E
W	<	v	>	
230	^		180	
650	>		<	590
530	v		v	150
	<	^	>	
S	310	2,400	10	

P.M. Peak Hour Traffic Volumes

N	290	2,600	230	E
W	<	v	>	
460	^		280	
660	>		<	850
430	v		v	190
	<	^	>	
S	290	2,870	50	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 5,970
E-W Road: 2,660

N-S Road: 6,730
E-W Road: 2,980

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	5,970	0.84	0.43	0.29	0.23	0.17
East-West Road	3.3	2.6	2.2	1.7	2,660	0.84	0.07	0.06	0.05	0.04
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,730	0.84	0.48	0.32	0.26	0.19
East-West Road	3.3	2.6	2.2	1.7	2,980	0.84	0.08	0.07	0.06	0.04

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.6	3.5
25 Feet from Roadway Edge	5.3	5.4	3.4
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Beach Blvd and McFadden Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Beach Blvd	At Grade	8	35
East-West Roadway:	McFadden Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	290	2,670	220	E
W	<	v	>	
270	^		180	
470	>		<	480
140	v		v	460
	<	^	>	
S	180	2,390	220	

P.M. Peak Hour Traffic Volumes

N	290	2,580	240	E
W	<	v	>	
350	^		190	
530	>		<	580
150	v		v	530
	<	^	>	
S	260	2,680	280	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 6,060
E-W Road: 2,030

N-S Road: 6,480
E-W Road: 2,350

Roadway CO Contributions and Concentrations

$$\text{Emissions} = (A \times B \times C) / 100,000^1$$

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,060	0.84	0.43	0.29	0.23	0.17
East-West Road	3.3	2.6	2.2	1.7	2,030	0.84	0.06	0.04	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	8.5	5.7	4.6	3.4	6,480	0.84	0.46	0.31	0.25	0.19
East-West Road	3.3	2.6	2.2	1.7	2,350	0.84	0.07	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.5	3.5
25 Feet from Roadway Edge	5.3	5.4	3.4
50 Feet from Roadway Edge	5.3	5.3	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Magnolia St and Warner Ave
Analysis Condition: 2030

	Roadway Type	No. of Lanes	Average Speed	
			A.M.	P.M.
North-South Roadway:	Magnolia St	At Grade	4	35
East-West Roadway:	Warner Ave	At Grade	6	35

A.M. Peak Hour Traffic Volumes

N	150	890	350	E
W	<	v	>	
240	^		50	
2,030	>		<	910
50	v		v	200
	<	^	>	
90		880		380
S				

P.M. Peak Hour Traffic Volumes

N	240	1,000	220	E
W	<	v	>	
260	^		150	
1,170	>		<	1,690
120	v		v	250
	<	^	>	
170		790		230
S				

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,560
E-W Road: 3,920

N-S Road: 2,660
E-W Road: 3,710

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,560	0.84	0.07	0.06	0.05	0.04
East-West Road	9.5	6.1	4.9	3.5	3,920	0.84	0.31	0.20	0.16	0.12
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	2,660	0.84	0.07	0.06	0.05	0.04
East-West Road	9.5	6.1	4.9	3.5	3,710	0.84	0.30	0.19	0.15	0.11

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.4	5.4	3.4
25 Feet from Roadway Edge	5.3	5.2	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Magnolia Ave and Slater Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Magnolia Ave	At Grade	4	35
East-West Roadway: Slater Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	120	840	190	E
W	<	v	>	
260 ^				90
980 >				380
80 v				110
	<	^	>	
	90	880	140	S

P.M. Peak Hour Traffic Volumes

N	150	1,130	60	E
W	<	v	>	
180 ^				90
370 >				840
80 v				160
	<	^	>	
	90	910	110	S

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,380
E-W Road: 1,910

N-S Road: 2,520
E-W Road: 1,710

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic			Emission		Edge	25 Feet	50 Feet	100 Feet
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²				
A.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,380	0.84	0.24	0.14	0.11	0.08
East-West Road	3.3	2.6	2.2	1.7	1,910	0.84	0.05	0.04	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,520	0.84	0.25	0.15	0.11	0.08
East-West Road	3.3	2.6	2.2	1.7	1,710	0.84	0.05	0.04	0.03	0.02

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.1	5.1	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Magnolia St and Talbert Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Magnolia St	At Grade	4	35
East-West Roadway: Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	90	810	300	E
W	<	v	>	E
150	^		^	210
1,010	>		<	510
60	v		v	90
S	<	^	>	S
	40	1,030	260	

P.M. Peak Hour Traffic Volumes

N	170	880	120	E
W	<	v	>	E
130	^		^	190
720	>		<	960
130	v		v	210
S	<	^	>	S
	90	980	130	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 2,590
E-W Road: 2,380

N-S Road: 2,470
E-W Road: 2,330

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,590	0.84	0.26	0.15	0.12	0.08
East-West Road	3.3	2.6	2.2	1.7	2,380	0.84	0.07	0.05	0.04	0.03
P.M. Peak Traffic Hour										
North-South Road	11.9	7.0	5.4	3.8	2,470	0.84	0.25	0.15	0.11	0.08
East-West Road	3.3	2.6	2.2	1.7	2,330	0.84	0.06	0.05	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.3	3.3
25 Feet from Roadway Edge	5.2	5.2	3.2
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Bushard St and Talbert Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Bushard St	At Grade	4	35
East-West Roadway: Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	100	440	190	E
W	<	v	>	E
170 ^				140
1,390 >				560
100 v				110
S	<	^	>	S
	100	460	160	

P.M. Peak Hour Traffic Volumes

N	80	530	100	E
W	<	v	>	E
90 ^				240
790 >				1,480
105 v				240
S	<	^	>	S
	110	680	150	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 1,500
E-W Road: 2,550

N-S Road: 1,815
E-W Road: 3,000

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

	A	A ₁	A ₂	A ₃	B	C				
	Reference CO Concentrations				Traffic	Emission	Estimated CO Concentrations			
Roadway	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,500	0.84	0.04	0.03	0.03	0.02
East-West Road	11.9	7.0	5.4	3.8	2,550	0.84	0.25	0.15	0.12	0.08
P.M. Peak Traffic Hour										
North-South Road	3.3	2.6	2.2	1.7	1,815	0.84	0.05	0.04	0.03	0.03
East-West Road	11.9	7.0	5.4	3.8	3,000	0.84	0.30	0.18	0.14	0.10

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.3
25 Feet from Roadway Edge	5.2	5.2	3.3
50 Feet from Roadway Edge	5.1	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Brookhurst St and Talbert Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Brookhurst St	At Grade	6	35
East-West Roadway: Talbert Ave	At Grade	4	35

A.M. Peak Hour Traffic Volumes

N	380	1,270	680	E
W	<	v	>	E
150	^		^	170
1,550	>		<	590
10	v		v	290
S	<	^	>	S
	100	1,060	530	

P.M. Peak Hour Traffic Volumes

N	270	1,410	380	E
W	<	v	>	E
290	^		^	410
960	>		<	1,330
200	v		v	360
S	<	^	>	S
	140	1,240	250	

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,710
E-W Road: 3,810

N-S Road: 4,000
E-W Road: 3,690

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Reference CO Concentrations	Traffic Volume	Emission Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	2.8	2.3	2.0	1.7	3,710	0.84	0.09	0.07	0.06	0.05
East-West Road	11.9	7.0	5.4	3.8	3,810	0.84	0.38	0.22	0.17	0.12
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,000	0.84	0.32	0.20	0.16	0.12
East-West Road	3.3	2.6	2.2	1.7	3,690	0.84	0.10	0.08	0.07	0.05

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.5	5.4	3.4
25 Feet from Roadway Edge	5.3	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.3

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

Project Number: 100000407
Project Title: Beach Edinger

Background Information

Nearest Air Monitoring Station measuring CO: Costa Mesa-Mesa Verde Drive
Background 1-hour CO Concentration (ppm): 5.0
Background 8-hour CO Concentration (ppm): 3.1
Persistence Factor: 0.7
Analysis Year: 2030

Roadway Data

Intersection: Brookhurst St and Ellis Ave
Analysis Condition: 2030

Roadway Type	No. of Lanes	Average Speed	
		A.M.	P.M.
North-South Roadway: Brookhurst St	At Grade	35	35
East-West Roadway: Ellis Ave	At Grade	35	35

A.M. Peak Hour Traffic Volumes

N	210	970	150	E
W	<	v	>	
	280	^		130
	870	>	<	280
	60	v		160
S	<	80	1,590	>
				280

P.M. Peak Hour Traffic Volumes

N	200	1,620	130	E
W	<	v	>	
	310	^		380
	420	>	<	760
	90	v		120
S	<	150	1,460	>
				170

Highest Traffic Volumes (Vehicles per Hour)

N-S Road: 3,330
E-W Road: 1,870

N-S Road: 4,100
E-W Road: 1,980

Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000¹

Roadway	A	A ₁	A ₂	A ₃	B	C	Estimated CO Concentrations			
	Reference CO Concentrations	Traffic				Emission				
	Edge	25 Feet	50 Feet	100 Feet	Volume	Factors ²	Edge	25 Feet	50 Feet	100 Feet
A.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	3,330	0.84	0.27	0.17	0.14	0.10
East-West Road	3.3	2.6	2.2	1.7	1,870	0.84	0.05	0.04	0.03	0.03
P.M. Peak Traffic Hour										
North-South Road	9.5	6.1	4.9	3.5	4,100	0.84	0.33	0.21	0.17	0.12
East-West Road	3.3	2.6	2.2	1.7	1,980	0.84	0.05	0.04	0.04	0.03

¹ Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

² Emission factors from EMFAC2007 (2008).

Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration²

8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration²

	A.M. Peak Hour	P.M. Peak Hour	8-Hour
Roadway Edge	5.3	5.4	3.4
25 Feet from Roadway Edge	5.2	5.3	3.3
50 Feet from Roadway Edge	5.2	5.2	3.2

² Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

